

The "A₂" state of a₂^{m-1}.

Pigmentation patterns in the aleurone layer that are associated with the dose of Spm initially present in the endosperm.

Good plant
I. 8737-9, self-pollinated. (Two pages of photographs.)

Phenotypes of a₂^{m-1} carrying kernels having no active Spm, and one, two, and three doses of an active Spm.

(1) No active Spm = Fully pigmented kernel.

(2) One Spm = Spotted and heavily speckled pattern of pigmentation.

(3) Two doses of Spm = Pigmentation pattern has fewer specks of pigment and infrequent large pigmented area.

(4) Three doses of Spm = Very few specks of pigment, confined to specific areas.

In addition, note:

(1) Twin areas in kernels having a "1 Spm" pattern: deep pigmented areas with adjacent area showing a "2 Spm" pattern.

(2) Areas with a "1 Spm" pattern in kernels that otherwise exhibit a "2 Spm" pattern.

(3) Infrequent kernel showing a pattern of pigmentation associated with somatically occurring change to active of an initially inactive Spm. *See 8737-9, 8737-10, 8737-11, 8737-12, 8737-13, 8737-14, 8737-15, 8737-16, 8737-17, 8737-18, 8737-19, 8737-20, 8737-21, 8737-22, 8737-23, 8737-24, 8737-25, 8737-26, 8737-27, 8737-28, 8737-29, 8737-30, 8737-31, 8737-32, 8737-33, 8737-34, 8737-35, 8737-36, 8737-37, 8737-38, 8737-39, 8737-40, 8737-41, 8737-42, 8737-43, 8737-44, 8737-45, 8737-46, 8737-47, 8737-48, 8737-49, 8737-50, 8737-51, 8737-52, 8737-53, 8737-54, 8737-55, 8737-56, 8737-57, 8737-58, 8737-59, 8737-60, 8737-61, 8737-62, 8737-63, 8737-64, 8737-65, 8737-66, 8737-67, 8737-68, 8737-69, 8737-70, 8737-71, 8737-72, 8737-73, 8737-74, 8737-75, 8737-76, 8737-77, 8737-78, 8737-79, 8737-80, 8737-81, 8737-82, 8737-83, 8737-84, 8737-85, 8737-86, 8737-87, 8737-88, 8737-89, 8737-90, 8737-91, 8737-92, 8737-93, 8737-94, 8737-95, 8737-96, 8737-97, 8737-98, 8737-99, 8737-100*

Plant
II. Ear of 8737-11, self-pollinated.

The description given in I above also applies here except that there were no kernels that commenced development with an inactive Spm and underwent changes to active during endosperm development.

III. The Bt kernels on self-pollinated ear of plant 8736E-3.

The kernels are arranged according to Spm content (except for the totally colorless kernels, the majority of which are homozygous for the standard recessive, a₂). There is an approximate 1 : 1 : 1 : 1 ratio among the phenotypic classes:

No Spm = totally pigmented kernels

1 Spm pattern = heavily spotted pigmentation pattern

2 Spm pattern = speckles of pigment over aleurone layer

3 Spm pattern = relatively few specks of pigment.

Kernels with 4 or more Spm usually are colorless. A few of them may have a tiny pigmented speck.

The variegated pericarp is an expression of the response of this state of a₂^{m-1} to changes in activity or location of Spm that occurred during pericarp development.

First ear, main stalk

- IV. 8738-11, self-pollinated. Full ear, two views
Section of ear, enlarged - 1 view
8738-11, tiller-1 x 8720-14. Shelled kernels
8738-11, tiller-2 x 8726-2. Two views of full ear
Two views of enlarged section of ear
- V. 8738-21 tiller-2 x 8726-2. View of full ear.